



What is claimed is:

1. A piston assembly for an internal combustion engine, comprising: a piston for reciprocal movement within an associated cylinder bore of the engine, said piston defining one or more ring grooves extending about a periphery of said piston;

a piston ring positioned within each of said grooves and extending about the periphery of said piston for sliding engagement with an internal wall of said cylinder bore; and

a piston ring compressible support means positioned radially between said piston and a back wall of at least one of said ring grooves for support and piston ring with respect to said back wall, thereby minimizing transverse movement of said piston with respect to said piston ring and said cylinder bore;

the compressible support means and said one or more ring grooves structure effective for exerting a pressure around the piston and piston ring for maintaining the piston concentrically within the cylinder bore and minimize movement of the wall face of the said piston ring from approaching, or falling into, said piston ring groove during operation;

the compressible support means further being effective for providing a substantially complete seal to minimize leakage of gases, or oil, upwardly and downwardly around said piston rings and past the wall face of said piston ring and through said piston ring groove.

2. A piston ring assembly in accordance with claim 1, including:

an end gap sealing ring positioned adjacent to at least one of said piston rings for effecting sealing of an end gap thereof.

3. The piston assembly in accordance with claim 1, wherein each of said elements comprises elastomeric material.

4. The piston assembly in accordance with claim 1, wherein each of said support elements comprises a coil spring.

5. The piston assembly in accordance with claim 1, wherein said support means comprises an elastomeric support member having a circular cross-section.

6. The piston assembly in accordance with claim 1, wherein said support means comprises an elastomeric support member having a rectangular cross-section.

7. The piston assembly in accordance with claim 1, wherein said support means comprise an elastomeric support member generally complementary in cross-sectional configuration to a cross-section of a back wall clearance defined between said ring groove and said piston ring.

8. A method of supporting a piston assembly for an internal combustion engine having a cylinder bore, comprising the steps of:

providing a piston for reciprocal movement within an associated cylinder bore of the engine, said piston defining one or more ring grooves extending about a periphery of said piston;

a piston ring positioned within each of said grooves extending about the periphery of said piston for sliding engagement with an internal wall of said cylinder bore; and

a piston ring compressible support and means positioned radially between said piston ring and a back wall of at least one of said ring grooves for supporting said piston ring with respect to said back wall, thereby minimizing transverse movement of said piston with respect to said piston ring and said cylinder bore;

the compressible support means said one or more ring grooves structure effective for exerting a pressure around the piston and piston ring for maintaining the piston concentrically within the cylinder bore and minimize movement of the wall face of the said piston ring from approaching, or falling into, said piston ring groove during operation;

the compressible support means further being effective for providing a substantially complete seal to minimize leakage of gasses, or oil, upwardly and downwardly around said piston rings and past the all face of said piston ring and through said piston ring groove.